CCORP Q&A

IDENTIFICATION AND CLASSIFICATION

Isolated CABG

Q. The patient was an emergency CABG with a coronary artery perforation in the cath lab. This was a redo CABG, and during the opening of his sternum, there was a laceration of the left ventricle due to adhesions. The patient subsequently had a CABG with repair of a LV laceration. I did not include this as an isolated CABG - should it have been?

A. Your case should be included as isolated. The need to repair the ventricle occurred due to a complication of the isolated CABG surgery. This was a redo and it sounds like an urgent or emergent case occurring within 6 hrs of a PCI - all high risk factors. The patient may also have been having an MI < 24 hrs (due to coronary perforation), so the patient's risk should be well accounted for.

Q. The patient had CABG plus repair of left ventricular lateral wall pseudoaneurysm with a bovine pericardial patch. Is this isolated CABG or not?

A. Non-isolated. Repairs of left ventricular (pseudo)aneurysms are non-isolated. Unlike the laceration of the ventricle above, ventricular aneurysms are usually due to infacts rather than surgical complications.

Q. This patient who had a history of previous CABG was scheduled for aortic valve surgery. When the sternotomy was performed a graft from a previous CABG was lacerated. The existing graft was repaired during surgery without requiring harvest of a vessel for the repair. I wouldn't call this a CABG but it was coded as a CABG by medical records. Would you please advise me?
A. During valve cases it is possible to "nick" an old bypass graft, as was done in this case. If the damage is minor (a tiny hole), a stitch may be placed in the graft rather than placing a new graft. If the graft is badly damaged, it may replaced. This kind of graft injury during a second heart surgery is carefully avoided and rarely occurs. If no new grafts are anastomosed onto a coronary, we would not consider this a coronary artery bypass surgery. If a new graft is placed, it would be a CABG. Of note, this case was non-isolated.

Q. If Surgical Ventricular Remodeling is performed with a CABG is the case considered an isolated CABG?
A. Virtually all ventricular remodeling surgeries involve forms of ventriculectomy and therefore would be non-isolated.

Q. If a left ventricular Aneurysm Repair is performed with a CAB is the case considered an isolated CABG?
A. LV aneurysm repair is always non-isolated.

Q: A CABG surgery case had mitral valve exploration via the left atrium. Is it an isolated CABG?
A: Yes, isolated. If all they did was explore the valve, which I interpret as palpate and inspect to see if the valve needed to be repaired, I would call it isolated. To do this inspection, they do need to make an extra incision in the left atrium, but the risk of surgery should not be significantly increased. We would not want to exclude just because they thought about repairing a valve but then didn't.

Q: If a patient has a CABG and a carotid endarterectomy at the same time, is the case coded as an isolated CABG?
A: If the carotid endartectomy was done during the same surgery (as it can be), it is a non-isolated CABG.

Q: Please advise me how to code this combination: CAB + Fem - Fem Bypass using gortex or vein to treat peripheral vascular disease. (known PVD & planned procedure).
A: Depends on which kind of fem-fem bypass. If “fem-fem bypass” refers to how the patient was placed on cardiopulmonary bypass, then this is an isolated CABG. A CABG in which the patient is hooked up to cardiopulmonary bypass (heart lung machine) via the femoral artery and femoral vein ("fem-fem bypass") is still isolated. Usually, the patient is attached to the heart-lung machine (CPB) via the aorta and the right heart (i.e., in the chest) rather than down in the legs.

If this was a surgery where a femoral artery stenosis was bypassed using a gortex tube or vein sewn into the other femoral artery (also called "fem-fem bypass"), then this procedure would be nonisolated.

Q. Patient had elective PCI (PTCA + attempted RCA stent deployment) complicated by contained aortic root dissection at the orifice of the RCA. The patient was taken emergently to surgery for primary repair of the aorta + CAB redo x2. Is this operation isolated CABG?
A. Repairing the aorta makes this non-isolated (unless the "contained dissection" was trivial, which I doubt).

Q. Is an operative ablation of the pulmonary vein for Atrial Fibrillation coded as an isolated CABG?
A. This is basically like a Maze procedure, but smaller. It makes some sense that since we are excluding Maze procedures we should exclude these – so for now this is non-isolated. However, the advisory panel may address this in the future since this is a small procedure that I doubt increases surgical risk.

Q. Is the operation: CABG + Pulmonary Vein Isolation (partial Maze Procedure) considered an isolated CABG?
A. I doubt this procedure increases in-hospital CABG mortality measurably and it would be less risky than a Maze (already low risk). As above, we will call this non-isolated until we can address this to the advisory panel.

Q. Is this operation an isolated CAB by CCORP definitions: CAB + Suture Repair of Localized Aortic Dissection (under circulatory arrest)? This was an intraoperative injury to the aorta caused by the partial aortic occluding clamp used during the proximal SVG anastamoses.
A. Isolated, since the dissection was an intraoperative complication rather than a preoperative event.

Q. If patient has ORIF of ankle after the CABG (same OR event and anesthetic) is this an isolated CABG?
A. This sounds like two unrelated surgeries done under the same anesthesia for logistic reasons and must be an unusual event. An incidental open reduction and internal fixation (ORIF) of an ankle is low risk, so I would call this an Isolated CABG.

Q: If the primary reason for the operation was constrictive pericarditis and they threw in the CABG because they were in there, is it an isolated CABG?
A: It is NOT an isolated CABG. A full-on pericardial stripping is a big surgery. More commonly when CABG and pericardiectomy are combined, the surgery was primarily a CABG (for angina, unstable angina, etc) and rather than close the pericardium, they removed some of it, that is, the pericardiectomy was an add-on. Looking at the chart to see if constrictive pericarditis was the primary indication for surgery could clarify. Thus, most CABG + pericardiectomies will be isolated CABGs, and this is how we expect them to be coded. If the surgery was primarily for constrictive pericarditis (rare, usually pericardial strippings are done without CABGs), then the hospital should specifically request a review by the panel and provide appropriate documentation.

Q: Is Redo CAB + Evacuation Pericardial Tamponade (S/P stent placement with perforation SV Graft requiring emergency pericardiocentesis, DC shock for V.Tach/Fib, intubation and transport to Operating Room) an Isolated CAB Operation?
A: Yes, isolated. However, PTCA within 6 hrs and status emergent (or perhaps salvage, can't tell) will capture this patient's high risk.

Q: Are patients with LV aneurysms who need a DOR procedure (new approach) treated as CABG only?
A: No, they are non-isolated, this is an LV aneurysmectomy.

Q: Should newer, experimental procedures, for example, aorto-coronary vein bypass grafting be considered isolated CABG?
A: The procedure referred to consists of plugging the bypass graft into the coronary vein rather than the coronary artery (they run parallel to each other on the surface of the heart - this is an operative decision and would be treated as an isolated CABG.

Q: Have left ventricular assist devices (VAD) generally been considered isolated? Patients with low ejection fractions may need both a CABG with either ventricular assist device backup or placement at the time of CABG.
A: Yes, that would be considered an isolated CABG. Basically the need for a VAD is a complication of a high risk CABG, even if you go in expecting that the VAD might be necessary. Usually it is decided if the patient will need the VAD after the CABG based on how they come off of the cardiopulmonary bypass machine. There may be some exceptions, however. In some cases, patients with severe cardiomyopathies go to surgery primarily to have the VAD placed as a bridge to transplant. There could be cases where a coronary artery is bypassed incidentally at the same time. However, if patients go to surgery primarily for the CABG (should be most cases), ending up on a VAD after the surgery does NOT make them non-isolated.

Q: Is a CABG surgery that includes a femoral artery endarterectomy with fem-fem bypass isolated?
A: Actually, a femoral arterectomy at the time of fem-fem bypass is a minor procedure and would be considered ISOLATED. The endarterectomy just removes some material from the lumen of the fem artery, usually just to allow placement of fem-fem bypass canula. It is not as big a procedure as an aorta-fem bypass, which is an exclusion for isolated CABG surgery.

Q: Procedure: "CABG + exploration of the right femoral artery and femoral vein with repair of the femoral artery and femoral vein." Damage to femoral vein/artery occurred in Cath Lab. Cardiac surgeon feels that repair of femoral artery/vein is similar to aorta-iliac-femoral bypass and increases risk of bad outcome/mortality so shouldn't be considered an isolated CABG.
A: We have previously ruled that CABGs with repairs of femoral arteries injured during catheterization are generally ISOLATED. I would not think this would increase risk. If there were some extenuating circumstance, there might be reason for review.

Q: Is a CAB + Subclavian False Aneurysm Repair and Repair of Femoral Artery an Isolated CABG?

A: Subclavian (artery?) false aneurysm repair and fem artery repair both sound like reasonably minor arterial repairs due to complications of catheterization of these vessels - this is probably ISOLATED unless somehow these were bigger surgeries than I am imagining. And of course it would definitely be isolated if the vessels were damaged as part of the CABG - i.e., repairs would be for surgical complication (suspect damage done by cardiologist preop however).

Q: One of our CABG patients had a triple bypass. When the Cardiac Surgeon was finished, the patient was off bypass, and the sternotomy was closed, a Vascular Surgeon re-prepped the patient and started a thromboembolectomy with vein patch angioplasty and a fasciotomy on the patient without the patient leaving the OR. (The patient had severe PVD.) I am thinking this is an Isolated CABG because the cardiac bypass portion of the surgery was completely over and then the other procedure started, and also the other surgery did not involve the chest cavity at all. In the Notes that I have it seems to infer that the femoral artery can be involved as long as the aorta is not involved. A concurrent surgery infers that they are happening at the same time. In this case one surgery was finished before the other started. Does a thromboembolectomy fall on list "A" or list "B" of the isolated CABG definition? Would you code this as Isolated?
A: Could go either way, but seems basically to be equivalent to doing a fem-pop or other peripheral vascular surgery at the same time, which we consider non-isolated. Minor femoral artery repairs (due to cardiac cath trauma) are considered isolated CABG.

Q: A very large aneurysm of the right graft was found. This measured approximately 3 inches in diameter and was resected completely. In addition, there was an aneurysm of the LAD graft, approximately 1 inch in diameter proximal to the LAD. Patient required endarterectomy of the midportion of the left anterior descending with vein reconstruction to the LAD diagonal, a vein reconstruction of the circumflex with good flow. The graft had been ligated above the aneurysm and the aneurysm removed completely. Is this an isolated CABG?
A: Yes, this is isolated.

Q: Patient had a ligation of a 1cm aneurysm of the Right Coronary Artery and lysis of adhesions of the pleural cavity. The following is quoted from the Op report: "Mid sternotomy incision was made and simultaneously a segment of saphenous vein was harvested from the left leg ...An attempt was made to enter the left pleural cavity and it was impossible in view that the patient had extensive adhesions and required extensive lysis of adhesions." Can this be considered a normal part of the take down or does it make the surgery non-isolated? A coronary endarterectomy will still qualify the patient as isolated. Ligating aortic and thoracic aneurysm, as well as, the heart muscle itself are on the list for non-isolated, but it really does not address aneurysm of the Coronary Artery. What do you think?
A: Ligation of coronary artery aneurysm is still ISOLATED. I think lysis of pleural adhesions should still be isolated, but I could see this one being open to discussion. I would call it isolated and suggest the hospital request a review by the panel if they feel otherwise. In most cases, lysis of adhesions would not increase surgical risk in my opinion.

Q: The following is an excerpt from the operative report. The physician feels that because the LAD was intramyocardial and thus required dissection of the myocardium and myocardial bridging, this is not a simple isolated CABG. NAME OF OPERATION: Off pump coronary artery bypass grafting with left internal mammary artery to left anterior descending coronary artery anastomosis and aorta-reverse saphenous vein bypass graft to right coronary artery and aorta-reverse saphenous vein bypass graft to obtuse marginal branch coronary artery. DESCRIPTION OF OPERATION This patient was initially admitted to X Hospital with myocardial infarction. The patient has a history of diabetes, insulin dependent for 20 years, and also had chronic renal failure. Cardiac catheterization and coronary angiogram show critical coronary artery disease with large right coronary artery in the mid trunk and occlusion of circumflex artery and LAD critical stenosis. The patient was recommended to have off pump coronary artery bypass grafting and, after general anesthesia was given, the chest, abdomen and lower extremities were prepped with Betadine and draped in a sterile fashion. Through small multiple incisions to the left thigh, the two segments of saphenous vein were harvested from the left leg. The veins were prepared for reverse bypass grafting and the leg incision was checked for hemostasis and was closed with 3-0 and 4-0 Vicryl. The median sternotomy was made in the midline, the sternum was split in half and left IMA was harvested with its muscle pedicle. The IMA had good pulses and IV heparin was given. The distal end of the IMA was clipped twice and divided. The IMA has good flow. The IMA was temporarily control with a bulldog clamp. Medtronic sternotomy retractor was applied to the sternum, the pericardium was opened, traction sutures were placed in the pericardium and examination showed three target vessels. The right coronary artery was large with thick wall. It was round 3-4 mm. The LAD was intramyocardial. The obtuse marginal branch showed proximal occlusion as per angiogram. First I prepared the LAD and used the Medtronic octopus stabilizer. We performed anastomosis between IMA and LAD with end-to-side anastomosis using running 6-0 Prolene suture. We released the clamp, blood flow restored. The patient tolerated the first anastomosis quite well. I then used a starfish suction devise and octopus to expose the distal right coronary artery and the artery target anastomosis site was chosen. Next I used a St. Jude Approximator to perform proximal anastomosis of saphenous vein to ascending aorta. The vein was brought to the right coronary artery. I then performed end-to-side anastomosis of the right coronary artery. The patient tolerated the procedure quite well. Next I exposed the obtuse marginal branch coronary artery and target anastomosis site was chosen. I then performed proximal anastomosis between vein and ascending aorta using St. June approximator. Then the vein was brought to the OM. I performed end-to-side anastomosis. Again hemodynamic condition remained stable, during the three grafts and the procedure. The patient did show inferior lateral wall hypokinesis due to recent MI. Heparin was reversed with protamine. Atriventricular pacing wire was inserted, hemodynamic condition was excellent and chest tube was inserted. I then closed the sternum...
A: Definitely ISOLATED. Intramyocardial LADs are not uncommon.

Q: Is CAB + Amputation of left atrial appendage isolated?
A: Yes, definitely isolated.

Q: Is a CAB + Myxoma isolated?
A: Resection of an intracardiac tumor (myoxma) makes this NOT isolated.

Q: Is CABG + excision of Left Atrial mixoma (tumor in L atrium) isolated?
A: Not isolated – see above

Q: Is a CAB + Thymectomy (for myasthenia gravis associated with thymoma) isolated?
A: This is ISOLATED because the Clinical Advisory Panel surgeons felt this was minor add-on surgery.

Q: Is this operation an isolated CAB by CCORP definitions? CAB + Suture Repair of Localized Aortic Dissection (under circulatory arrest). FYI: This was an intraoperative injury to the aorta caused by the partial aortic occluding clamp used during the proximal SVG anastamoses.
A: ISOLATED, since the dissection was a surgical complication.

Responsible Surgeon

Q. Since we are a teaching hospital with Residents and Fellows, would the responsible surgeon always be the Attending, although the Fellows are licensed?
A. Responsible surgeon means the principle surgeon who performs a coronary artery bypass procedure. If a trainee performs this procedure, then the responsible surgeon is the physician responsible for supervising this procedure performed by the trainee. In situations in which a responsible surgeon cannot otherwise be determined, the responsible surgeon is the surgeon who bills for the coronary artery bypass procedure. The way "attending" is being used in the question, the attending will always be correct. The CCORP definition explains that the supervising MD, i.e. attending, and not the trainee is responsible.

Date of Death

Q. The STS asks us to track death within the hospitalization for 30 days from date of surgery, if outside of the hospital. Do you want any deaths outside of the hospital recorded in the death date field? It is easy to verify against the discharge status and discharge date fields. Otherwise, we are going to require separating date of death fields- one for CCORP and one for STS.
A. For CCORP, the patient status at discharge field refers to in-hospital death only, so for any patient that died in the hospital the date of death should equal the date of discharge. We strongly discourage hospitals from submitting dates of death that occur post-discharge in the Date of Death field. However, we understand that this conflicts with STS practices and will accept data that have post-discharge dates of deaths recorded.

RISK FACTOR: OPERATIVE

Status of the Procedure

Q: If the patient is being bagged on the way to the OR but does not require compressions (DC Shock in Cath Lab converted V.Fib) are they considered an Emergent/Salvage Operation?

A: Since no chest compressions, emergent but not salvage. With recent VT/VF as yes, PCI within 6 hrs, MI within 24 hrs this patient will come out as very high risk in our model even without salvage.

Q: After visit to the Cath Lab the patient was felt to be too critical to take to surgery. It was noted that the surgery would be safer if they could wait 48 hours for the myocardium to recuperate and for his pulmonary edema to resolve. The patient was intubated in the ICU on a balloon pump receiving Dopamine, Diprivan, and a Morphine drip for 48 hours before he went to the OR. Emergent or Urgent for the Status of the Procedure? There was no way this critical patient would be discharged home and it is well documented that while waiting he was also at considerable risk for extending his MI ...even death. Emergent states it is safe to wait, in this case it was not safe to proceed. Would you code urgent or emergent?
A: If the patient was still intubated for pulmonary edema at the time of surgery, then the patient meets STS definition for emergent. If the patient was still in shock at the time of surgery (see shock definition) then they are emergent. Sounds like this patient met both of these emergent criteria.

RISK FACTOR: COMORBIDITY/OTHER

Diabetes

Q. Patient is admitted for elective cardiac catheterization with a history of stable angina, CCS Class II. Admission blood glucose is mildly elevated. Physician H & P's list borderline diabetes as a diagnosis. Should diabetes be coded 'Yes'?
A. The STS/CCORP diabetes definition is loose and just requires a chart diagnosis. As a clinician, I would not make the diagnosis of diabetes on a single mildly elevated glucose but we are not asking the coders to be smarter than the clinicians, so if an MD says diabetes, diabetes could be coded 'Yes.'

Q. If a physician states borderline diabetes in his list of admission diagnoses based on an elevated blood glucose in a stable patient, most likely the patient was undiagnosed prior to admission and was not treating the "diabetes" even with diet. Hence, the child field = None for control at admission. Should the STS/CCORP field Diabetes be 'Yes' or 'No' in this scenario? FYI: Postoperatively, some of these patients go on to receive diabetic teaching and treatment, while others do not. Can you re-clarify CCORP's interpretation here?
A. An isolated mildly elevated random glucose on admission is an unreliable way to make the diagnosis of diabetes. It sounds like the clinicians admitting the patients are over-diagnosing diabetes at admission, so I am tempted to say that if there was no prior history of diabetes, we should not count it. However, that is not what the STS definition says, and there are times when folks come in with bona fide diabetes (Hgb AIC = 10) previously undiagnosed. I guess I would ask you to use your judgment, if the patient seems to truly have DM and it is listed as an admission diagnosis, go ahead with "yes". If it is clear to you the patient does not have diabetes, you could code "no".

Q. If a patient is originally thought to be non-diabetic pre-operatively but has a hemoglobin A1C done pre- or post-operatively that states they are diabetic, how do you code this? Is the Hgb A1C sufficient for documenting pre-operative diabetes?
A. We advise coders not to make diagnoses that were not made by the clinicians caring for the patient. Therefore, HgbA1C alone is not enough. A clinician needs to state the diagnosis in a pre-op note. Of course, a post-op HgbA1c should not be used for a pre-op risk factor diagnosis (though I know HgbA1C takes a few weeks to rise).

Cerebrovascular Disease (CVD)

Q: The cardiac surgeon documented "carotid Doppler showed 60%-80% narrowing of the R internal carotid artery". The cardiologist later performed a carotid angiogram and documented "...non obstructive disease and the diameter stenosis in the range of 30-40% involving the ostial of the right internal carotid artery and around 30% of the ostium of the right external carotid artery". Should I code yes or no to cerebrovascular disease?
A: Angiogram is more accurate (probably) than ultrasound so if the angiogram was done prior to CABG surgery, I would probably say no to carotid disease. If the Ultrasound was prior to CABG surgery and angiogram was after after CABG surgery, I would probably say yes. Answer no if the angiogram was before surgery.

Q: What types of brain surgery are considered cerebrovascular disease? During the training it was stated that aneurysms, which require clipping, are included. Are there other examples such as brain tumor removal?
A: I would say NO for others. Tumors do not correlate with cerebral atherosclerosis and I suspect they do not increase risk of CVA during CABG much.

Peripheral Vascular Disease (PVD)

Q: I am abstracting the chart of a patient who had polio and a history of right leg and foot surgery. When harvesting veins for the grafts they had to use entire length of both legs because the veins in the lower legs were very small. My question, would you code this as a yes or no for peripheral vascular disease?
A: No for peripheral vascular disease. Though the word "vascular" is used, PVD is meant to refer to peripheral arterial disease, not vein problems.

Q: If the patient had prior ascending aortic repair for a dissection (possibly extending beyond the iliacs) is PVD Yes or No?
A: Absolutely, Yes.

Q: Clarify the definition of "peripheral vascular disease". Does this include only peripheral arterial disease or both arterial and venous disease (DVT)?
A: PVD does NOT include DVT - only arterial disease. DVTs are not necessarily due to anything abnormal about the veins (though they can be).

Q: If the patient had prior ascending aortic repair for aneurysm limited to the thorax (asc/arch/descending aorta) is PVD Yes or No?
A: Coded as Yes. This might have been a prior cardiac surgery i.e., most aortic root repairs are counted as cardiac surgeries.

Q: If a patient has had a prior CABG and SVs are used, do you count this as history of peripheral vascular disease?
A: Absolutely NOT. The use of saphenous veins from the legs as conduit for grafts does not count as peripheral vascular disease. Peripheral vascular disease refers to aortic aneurysms or ARTERIAL stenoses - not vein problems of any kind.

Cerebrovascular Accident

Q. The definition for this data element is CVA at any time prior to surgery. Do we then answer this statement as "No" if the CVA was intraoperative?
A. Yes, CVA as a intraoperative complication is NOT coded, we only code CVA when it is prior to surgery.

COPD

Q: Is the documented history of COPD insufficient evidence when there are no regularly used inhalers or oral bronchodilators and no PFT's are available?
A: Yes, if the chart says "COPD" but patient is on no meds and has no PFTs, this would be coded COPD = NO. This is what the STS requires – confirmation of a chart diagnosis of COPD with PFTs or meds.

Q: Does a history of prior pneumothoraces, bleb resections (perhaps at the time of CAB) or chest x-ray findings for COPD in the absence of regularly used inhalers etc count for COPD?
A: According to the current definition, NO.

Hypertension

Q. Regarding coding for hypertension, is this data element concerned only with pre-operative history of hypertension, or does it include hypertension anytime during the patient's admission?
A. Only preop HTN. The pain of CABG makes BP go up post op - this doesn't count.

Immunosuppressive Treatment

Q. Should “Immunosuppressed” be coded as ‘Yes’ for patients who go on IV steroids pre-op for CABG surgery? We have a surgeon who does this routinely with his patients.
A. Since the surgeon is giving the IV steroids for the CABG, the answer is No. This use of steroids represents an aspect of how the surgeon performs the CABG rather than a preop risk factor. The immunosuppression field is intended to identify patients post organ transplant or those with major immunologic conditions.

Hepatic Failure

Q. We have a patient with liver disease that barely missed the criteria for coding 'Yes' to hepatic failure, but any clinician would recognize this as a legitimate hepatic failure patient. He had a preop albumin of 2.0, bilirubin of 1.9, (should have been at least 2.0) and ammonia of 53. The OP report states that due to his liver failure special precautions were taken when reversing his anticoagulation as he came off bypass. The following is quoted from the OR report:

"...we took our time trying to maintain and achieve hemostasis. A total of 4 units of fresh frozen plasma, 2 of platelets and 2 of cryoprecipitate were given. A patient with liver failure and also some DDAVP and while at one point we looked and had good hemostasis, we then started to get wet once again, and gave products with successful control of hemostasis." The patient returned to OR several hours later for bleeding and the following is a quote from that OR report. "Again no obvious sources of bleeding were found. There was generalized oozing from all cut surfaces including the aorta, especially the sternum." He received more FFP etc. The patient was non-isolated, (AVR) and expired. I realize this case will not be included in actual data however; this seems to me to be an injustice to the physician who definitely had a patient with considerable risk that would not have been considered had the case been isolated. I am wondering if others have come across this same type of issue and if so are changes in the coding criteria being considered?

A. Unfortunately, this cannot be coded as hepatic failure = 'Yes'. Let me say that since this patient was CABG+AVR, the case would not be used in calculating your hospital's risk-adjusted mortality rate, which is based on isolated CABG cases only. We encounter the issue of patients just missing the cutoff frequently for various risk factors. I agree this patient has significant liver disease, but we need to draw the line somewhere and be consistent in our application of definitions. In this case, this definition worked elsewhere (NY) and we have adopted it for California.

Q: Patient has a well-described history of ETOH cirrhosis with recent admission in for evaluation and treatment. He is readmitted now with an acute myocardial infarction and congestive heart failure. Admission labs include a bilirubin of 0.5 and albumin of 3.3. I am inclined to record Yes to hepatic failure. However, does the albumin and bilirubin both have to meet the definition requirements? This patient has a documented history of significant hepatic failure but only the albumin meets the CCORP definition.

A: We have adopted New York's definition since it worked for them. It is a strict definition requiring that both bilirubin > 2 and albumin < 3.5. This patient would NOT have hepatic failure by our definition. Note, it is hepatic "failure", not liver disease.

RISK FACTOR: CARDIAC

Arrhythmia

Q. A patient who was admitted had a cardiopulmonary arrest "probably secondary to excessive medication in chronic renal failure pt..." (She had received 2 mg of Dilaudid IV). She received CPR, Atropine, and was intubated. Documentation states monitor showed bradycardic rhythm in the 20's and she was not breathing. There were no palpable pulses. Technically, this does not fit either VT, HB, or A-fib but seems like a significant arrhythmia so I wasn't sure about saying no either. How should I code this re: arrhythmia?

A. This case does not qualify as VT, VF, Afib or 3rd degree heart block. STS defines arrhythmia as these three. Have to say no "arrhythmia". Besides, in this case the bradycardia was actually not a primary event but just a response to illness.

Q. We took a patient to surgery undergoing CPR in route to the OR. However, I did not check arrhythmia Yes because the patient was asystolic. He had no rhythm as opposed to patients with V-Tach or V-Fib. And yet all three require CPR and are life threatening. Comments?
A. In the case mentioned, all other risk factors will be overwhelmed by "salvage", "shock". Asystole is indeed as bad as VT/VF (worse actually), but for clarity sake I would leave it out. I think VT/VF was meant to capture something else - risk of subsequent electrical events.

MI

Q: I time the MI based on when the patient presents him/herself for medical attention and diagnostic intervention is initiated. This generally means the date/time the patient presents to the emergency room or physician's office to the date/time surgery begins. Using this system most patients fall into the 1-7 day interval despite the fact their pain syndrome may have begun several days prior to seeking medical attention. I have discussed this with the ACC nurse abstractor. She concurs that her method of timing the MI interval is also based on the onset of the current care interval. Comments?
A: Timing it like this is fine. I would say from the time the patient presents to medical attention and gets diagnosed with the MI is what STS means - i.e., when they show up at the ER just as they are doing. The patient may have had symptoms earlier, but who knows, that might have just been pre-infarction angina.

Cardiogenic Shock

Q. We had a patient who the physician wishes to code as "Cardiogenic Shock: Yes." The patient went directly from Cath Lab to OR. The patient's ejection fraction was calculated as 20%, although blood pressures in the Cath Lab were between 121/73 and 182/111. Labetolol, Vasotec, and a Nitroglycerin drip were all given during the patient's stay in the Cath Lab. In addition, an intra-aortic balloon pump was inserted pre-operatively in the Cath Lab (the indication for the IABP per the cardiologist was for continuing chest pain despite nitroglycerin drip). However, a swan-ganz catheter was not inserted until the patient was taken to the OR. In the OR, the initial Swan-Ganz readings indicated a C.I. of 1.67.

Can we code this patient as "Cardiogenic Shock -- Yes" if the only supporting documentation by CCORP standards appears to be the cardiac index that was measured in the OR suite (although this measurement was probably performed prior to the incision)?
A. Clinically it does not sound like this patient was in shock (rather hypertensive), so I am very surprised by the low cardiac index. In any event, I would not accept a value from the OR (even pre-incision) and would code shock=No. The IABP was for angina not BP. On the other hand, the procedure was certainly emergent, angina class IV. See Shock definition below:

SHOCK:

(A) Definition/Description: The patient, at the time of procedure, is in a clinical state of hypoperfusion according to either of the following criteria:
(i) Systolic blood pressure (BP) < 80 and/or Cardiac Index (CI) < 1.8 despite maximal treatment.
(ii) Intravenous inotropes and/or intra-aortic balloon pump (IABP) necessary to maintain Systolic BP > 80 and/or CI > 1.8.

Q: How should patients with Hemodynamic Instability or Refractory Shock be coded?
A: Refractory Shock should be coded as Cardiogenic Shock = Yes, and Hemodynamic Instability should be coded as No.

Angina

Q: If a patient's angina type is unstable but their CCS is less than III it comes up as an illogical relationship on data checks. Some hospitals have taken issue with this. They argued that the STS unstable angina definition is based on treatment but the CCS definition is based on symptoms. So if a patient is seen after these treatments have been initiated then symptoms could decrease to CCS class II or lower. So, have these hospitals been coding these elements right? Is there still a logical relationship between unstable angina and CCS III and above?
A: Unstable angina for our purposes is not consistent with CCS class other than III or IV (see unstable angina def below). CCS class is supposed to be highest class leading to hospitalization. I suppose what they are referring to is that patient may have had increase in angina in past two months to class III or IV, and then been put on additional therapy so that symptoms are now class II for more than 24 hrs before cath. I would say for outpatients they meet the criteria for unstable angina UNTIL the medications reduced the symptoms to class II. At that point, they had unstable angina before which has now been stabilized, so that the type of angina present within 24 hrs of surgery is stable. My guess is they are coding these recently stabilized patients as unstable. Patients admitted to the hospital meeting unstable criteria below could be called unstable even if they have not had symptoms for 24 hrs, as long as they never left the hospital. So the definition requires they have at least class III angina when they are admitted and that since then they have never left the hospital (see below). These requirements should always result in the CCS class being coded as at least class III or IV. In fact, I can think of some patients who would be class III or IV and NOT meet unstable criteria, but not the other way round.

A final point, we are using the STS definition for unstable angina.

ANGINA TYPE
(A) Definition/Description: The type of angina present within 24 hours prior to the CABG surgery is:
(i) Stable: Angina not meeting unstable criteria below that is controlled by oral or transcutaneous medication.
(ii) Unstable: Requires continuous hospitalization from the episode until surgery and one of the following:
(a) Angina at rest.
(b) New onset angina in past 2 months of at least Canadian Cardiovascular Society (CCS) Class III.

(c) Increasing angina in past 2 months ? angina that has become more frequent, longer in duration, or lower in threshold; and increased by greater than or equal to 1 CCS class to at least CCS Class III severity.

Q. If a patient has had no prior history of angina, but comes in with chest pain and is diagnosed with a transmural MI then do we code this as: 1) hx angina = yes, 2) angina type = unstable angina d/t rest angina 3) CCS Class = IV?
A. This is actually covered explicitly in the manual, but it is a little confusing. Chest pain at rest, even though it turns out to be an MI, qualifies as all of the following 1) an MI, 2) unstable angina and 3) Class IV (rest angina). This is true for Non Q wave and Q wave MIs. So unless MI is asymptomatic, most MIs will be class IV and unstable angina.

CCS / NYHA Classification

Q: Do CCS Class and NYHA Class have to be equal?
A: CCS and NYHA class don't have to be equal in theory. In practice, we can't easily distinguish anginal symptoms from CHF symptoms in patients who have both. In these cases, what we really assess is overall functional class - meaning how much activity can the patient do without symptoms - and we don't worry whether the symptoms are anginal or CHF. More recently, the STS has decided to use NYHA as an overall functional status (ie angina or CHF or other cause of activity limitation) and CCS for angina. In this system, NYHA will always be as high or higher than CCS. Of note, the CCORP has opposed this change by STS but we are going along with it.

Q: In a case where the patient had an MI one month earlier but is now angina free on meds, what should the CCS classification be?
A: The new CCS class specs state "The highest class leading to episode of hospitalization and/or intervention" which is ambiguous with respect to time window. The MI was angina at rest 1 month ago. We use the highest angina class in the two weeks prior to the surgery (probably class I or II in this patient) based on the STS's prior definition. The current definition is ambiguous but we've been told they did not intend to change it. If the patient did not remain hospitalized continuously from the MI to the CABG, then you need to assess how much angina they were having within 2 weeks prior to the surgery (i.e. the highest class within 2 weeks), rather than at the time of the MI 1 month earlier. If the MI had been within 2wks and the MI presented with rest pain, then class IV would be appropriate.

RISK FACTOR: HEMODYNAMIC

Ejection Fraction

Q. For Emergent/Salvage cases when no LV gram or echo is done, on STS I can check: EF Done? NO. In CCORP if I leave the field blank it will be defaulted as normal. Correct? Clearly some the patients will not have a normal EF, indeed one massive MI patient had severely reduce LV function. What should I enter, if anything?
A. LVEF needs to have been measured (by a test) in order for a value to be entered. Visual "estimates" based on looking at a test (eg, echo, LV gram) are

acceptable - this is in fact how most LVEFs are measured. The alternative is to use edge detection and planimeter the LVEF - a so called "calculated" EF, which are probably less accurate than visual estimates. When we look at the echo, we can either describe our "estimate" of the LVEF as a number or an adjective (a descriptive phrase). If described with adjectives, then the numerical equivalents apply that are listed in the Data Abstractor Training Manual.

"Estimates" of LVEF based on no test (eg "the patient was in shock and having an MI therefore the LVEF must have been < 20% even though we never looked at the LV and are really just guessing") are not acceptable. You should leave these blank.

Q. If a cardiologist and surgeon's notes conflict (e.g. one states the patient has diabetes and the other states negative for diabetes or differences in EF), whose answer do you use for coding?
A. For EF, the official dictated report of the cath or echo or nuclear scan used to measure the LVEF is the one that counts. Usually this dictation is by the cardiologist. For diabetes, you may use either, whichever note you believe based on your best judgment and other clues in the chart.

Q: The hemodynamic printout from the cath lab has a calculated EF recorded as 84%. The cardiologist's handwritten preliminary cath findings in the progress notes states "LV normal". Routinely, I use 60 for "normal". Here I would record 60 as opposed to 84. The method would be LV gram. Is this within CCORP regulations?
A: Yes. 84% is probably inaccurate, as calculated EF often are, so unless Cardiologist said "hyperdynamic", 60% is a better bet.

Left Main Disease (% Stenosis)

Q. Pt admitted for elective LHC/PCI. While attempting the PCI in another vessel, there was a dissection in the Left Main. (Initial angiography = 0% stenosis LM) The operator was unable to place a stent at the site. The patient became symptomatic, required IABP. He was taken emergently to the OR for an unplanned CAB. The PCI procedure dictation does not state or describe a TIMI flow of the vessel or a % of flow obstruction. What should the Left Main data field entry be?

A: I would treat a left main dissection, which became symptomatic and required IABP and immediate CABG as 80% left main stenosis, ie, a fairly tight LM stenosis.

Q. A vessel described by the physician as subtotally occluded with a TIMI I flow would be considered what percentage stenosis? How does one figure out the degree of left main disease, when the circumflex and the LAD are considered the Left Main? When one may be 80% and the other 40%, what is the total percentage of occlusion?
A. A “subtotaled” vessel should be called a 99% stenosis. The question about the left main is a misunderstanding. If the left main is >= 50% stenosed, for the purposes of counting how many vessels are diseased, you count the LAD and Circ, whether they have stenoses or not. The left main counts as "two vessel disease". The converse DOES NOT apply. If the LAD and Circ are diseased, the left main is not considered diseased for the left main stenosis field. You do not "add up" the stenoses of the LAD and Circ to get a left main stenosis. If the LAD and Circ are diseased, the left main may still be and often is 0% stenosed.

Q. One of the patients we are submitting data for had documentation in the chart indicating that the Left Main vessel was non-existent, and the CIRC and LAD had separate openings off of the Coronary Sinus. How should we code the Left Main Disease (% stenosis) field? Would it default to the amount of stenosis (if any) in the other 2 vessels mentioned?

A. This is a fairly common normal anatomic variant and is the same as 0% LM stenosis (or none). In this case, the LAD and circumflex have separate openings off the aorta rather than both arising from the LM. Since there is no LM, it can't be stenosed.

Q: When the MD just documents on the diseased vessels and doesn't mention those without significant disease, for example "Coronary Angiography: LAD 85%, RCA 99%" without specific mention of the Left Main".... What do I report as %LM?"
A: Case would be coded as NO left main stenosis - i.e. 0%. By the way, we cardiologists are much better about quantifying mild left main stenoses, which are less than 50% than we are for other vessels.

Q: A patient who had an attempted PCI targeting a lesion in the circumflex artery, which, resulted in a dissection of the left main. The operator was not able to place a stent at the site. The patient became symptomatic, also requiring IABP. He was taken emergently to the OR for an unplanned CAB. The procedure dictation does not describe the presence of acute closure of the vessel, nor a flow assessment %. The surgeon describes a "partial dissection" of the Left Main in his surgery dictation. What should the entry be for the Left Main data field?
A: I think coding a high grade left main stenosis would be appropriate, say 90%.

Q: If there is a discrepancy in the LM stenosis % documentation between the cardiologist and the surgeon, which value should be entered in the data field? Example: LHC Report: LM stenosis = 80%, OR Dictation: LM = 60-70 %
A: Official cath report is what we will audit and should be entered. 80%

Q: How does a hospital report numerically a finding noted as "normal" or "free of disease" for LM findings in the doctors notes? Also, we give a qualitative example of "mild" as 20%. Are hospitals to leave this information blank for "normal" LM findings, or give a value under 20? What is a numeric equivalent for "normal" LM disease?
A: A finding noted as "normal" or "free of disease" for LM represents a numeric value of 0%, but this may depend on software (not sure if none is a choice). If hospitals leave it blank, we will score it as 0%, which is fine, but it is probably best to put 0%.

Q: How does a hospital quantify "densely calcified"? On a chart note like this, I would be inclined to have the surgeon review our LM valid values ranges of 0 – 100 then specifically ask the surgeon what number closely relates to his "densely calcified" note. This question arose within our hospital because we did not give a quantitative example of "densely calcified" in our manual.
A: Calcification does not represent stenosis and has no bearing on how a coronary is scored for our purposes. You can have a densely calcified coronary, which is not at all stenosed (i.e., 0%). The stenosis issue is separate and needs to be looked for elsewhere in the cath report. We clinicians do care about calcification, but it has no bearing on stenosis.

Number of Diseased Vessels

Q: What category of vessel does the "ramus intermedius" falls under? Would it be LAD, circumflex, etc.?
A: The ramus can feed either part of the circumflex distribution, and less often, part of the LAD, varies from person to person. Most people don't have a ramus. When the ramus is described as a sizeable vessel (that is, they don't say that it is small), then they may count it as either the LAD or the circumflex. Thus, if a patient had LAD and ramus disease, this would be 2 vessels. If a patient had LAD, circumflex and ramus disease, this would still be two vessel disease (i.e., can't count all three). Many rami are too small to count - coders should do the best they can. If the ramus was grafted, that is a clue that it is probably reasonably sized. Another similar variation is the patient with a left dominant circumflex – in these patients a proximal circumflex stenosis counts as two-vessel disease (since it subtends both the usual circ and RCA distributions). All this sounds complex, but being off by one vessel has a negligible effect on calculated risk. Do the best that you can.

Q: If the patient has prior stent and the coronary is patent, do I count this as a diseased vessel? Wouldn't this be consistent with counting a bypassed vessel as diseased in the patient with a prior CAB op?
A: Yes. Assuming vessel had stenosis pre stent (you can assume it did if this info is not available). Prior bypassed vessels count as diseased as long as it was originally stenosed > 50%. We don't count vessels, which are bypassed but not diseased (rare situation).

Q: Patient had a previous CAB X3 20 years ago. The Left Main has a proximal 90% lesion. The take off for a "large " Ramus is distal to the LM lesion. There is a LIMA graft to the LAD, but the LAD has a 90% lesion after the anastomosis. The graft to the Diagonal had 99% occlusion with thrombus. The native Circumflex is 100% occluded, but the OM graft is widely patent with flow noted to the Circumflex. The Right Coronary artery could not be visualized. Am I correct to enter the Left Main Disease as 90%? Would the number of vessels be 1 even though the Left Main is involved as the Circumflex is protected by a patent graft? If the RCA would not visualize should that be included making the field entry for number of vessels 2?
A: 90% left main, 2 vz CAD (from either the left main being > 50% or the fact that the circ is 100% occluded and the LAD has a 90% stenosis. The RCA cannot be commented upon but when they are not visualized usually this is because they are anatomically very small or they are occluded. However, it could have just been missed, so this should be 2 vessels.

Mitral Insufficiency

Q. If a surgeon diagnoses valvular dysfunction intra-operatively (i.e. TEE during surgery), can this be used to code mitral valve disease?
A. No. If preop studies - LV gram and/or echo - show no MR and intraop TEE shows MR it is always possible that the MR developed only intraop.

Q: I am still troubled with MR that is recorded on outpatient echos but is not mentioned on more current studies particularly the catheterization preceding operation. This is especially troubling when the LV gram portion of the study says, "No MR noted". Comments?
A: You can count MR on an echo, which was not seen on LV gram as long as the echo is reasonably recent, say, earlier during the same hospitalization or within 2 weeks pre CABG. Echos pick up MR better than LV grams sometimes. But of course, an old echo might just mean the MR has resolved.

PROCESS OF CARE

Cardiopulmonary Bypass Used

Q. Our surgeon frequently uses a "PADCAB" (Perfusion Assisted Direct Coronary Artery Bypass). Because the device clearly states that it provides "coronary artery bypass," we have been coding these patients as "Cardiopulmonary Bypass Used: Yes"; and "Cardioplegia: No." However, I was speaking with our surgeon today, and he stated that using the PADCAB is not necessarily providing cardiopulmonary bypass. He stated that it would only be considered bypass if the patient were actually attached to the "heart-lung" machine. We would know this because a pump time would be located within his operative note. However, he also has times listed for the PADCAB as well. My question is: Have we been coding these patients correctly (i.e. does use of the PADCAB automatically qualify as cardiopulmonary bypass)?
A. No. I agree with the surgeon. PADCAB is an innovative surgical technique, which is not the same thing as cardiopulmonary bypass. Of course, the CPB and cardioplegia fields are not preop risk adjusters. We collect this information purely to help detect if one particular surgical technique is associated with very high mortality, but how a surgeon chooses to perform a CABG is never a risk adjuster.

It's hard for a data system to keep up with all this innovation! The STS may need to add a question for PADCAB just to see how these patients do (again, not as a risk adjuster).